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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/752,431	01/06/2004	Robert Baer	0132.67604	3776
7590 Patrick G. Burns GREER, BURNS & CRAIN, LTD. Suite 2500 300 South Wacker Drive Chicago, IL 60606			EXAMINER REESE, DAVID C	
			ART UNIT	PAPER NUMBER
			3677	
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		01/24/2007	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/752,431

Applicant(s)

BAER ET AL.

Examiner

David C. Reese

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 03 November 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-3 and 5-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)                        | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

THIS FINAL ACTION IS RESPONSIVE TO THE AMENDMENT FILED 11/3/2006.

#### *Status of Claims*

- Claim 4 is canceled.
- Claim 1 was amended.
- Claims 1-3 and 4-9 are pending.

#### *Claim Rejections - 35 USC § 103*

- [1] The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

- [2] Claims 1, 3, 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Craven, US- 6,666,638, in view of Fukubayashi, US-5,044,855, and even further in view of Linsey, US- 112,935.

Although the invention is not identically disclosed or described as set forth 35 U.S.C. 102, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a designer having ordinary skill in the art to which said subject matter pertains, the invention is not patentable.

As for Claim 1, Craven teaches of a fastener (300 in Fig. 14) for composite material comprising:

a shaft (363, 353) having a longitudinal axis,

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an undercut head at a first end of the shaft (170 and below in Fig. 5, and from col. 6, line 6, "...the remnants 80 that are cut or extruded from the remnant-producing material 82 may also be captured by the lower neck portion 174, the upper neck portion 172, and the land area 190").

a point (340) at the other end of the shaft (end of 353),

a first portion of the shaft (353) adjacent the point (340) being threaded (354), and extending over a portion of the total length of the shaft (363,353),

a second portion of the shaft (363) adjacent the head not being threaded, said second portion having a plurality of spaced rings (394), the spaced rings (394) reducing the mushrooming of the composite material when the fastener is used in the composite material (from col. 7, beginning with lines 9, "screw captures the remnants that have been extruded onto the surface of the remnant-product material. In use, remnants 80 that are shaved, cut, or otherwise pushed to the surface 83 of the remnant-producing material 82 are captured by the threads 264 of the upper threaded portion 260. Refer now to Fig. 14 that shows a screw...according to another embodiment of the present invention.")

The differences between the claim and Craven are the following: the threads (354) and first portion of the shaft having three radial lobes; and the head having an undercut edge which is inverted in a circular arc towards the head, the undercut edge being furthest from a top surface of the head at an outside portion of the head furthestmost from the longitudinal axis, the undercut edge being closer to the top surface between the outside portion and the longitudinal axis. With regard to the former of the two issues above, Fukubayashi discloses a fastener similar to that of Craven. In addition, Fukubayashi further teaches of threads and a first portion of the shaft having three radial lobes (see Fig. 2) (col. 1, lines 32-51). It would have been obvious to one of

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ordinary skill in the art, having the disclosures of Craven and Fukubayashi before him at the time the invention was made, to modify the threads and first portion of the shaft to have three radial lobes, as in Fukubayashi. One would have been motivated to make such a combination because one would want a configuration of the thread and screw that allows for the screw to be more easily driven with a lower driving torque; also decreasing slipping force and thereby increasing the holding torque of the screws as taught by Fukubayashi in col. 2, lines 37-68.

With regard to the latter of the two issues above (...head having an undercut edge...)” Linsey discloses a fastener similar to that of Craven in view of Fukubayashi. In addition, Linsey further teaches of a head (B) at a first end of a shaft, the head (B) having an undercut edge (a) which is inverted in a circular arc towards the head (B), the undercut edge (a) being furthest from a top surface of the head at an outside portion of the head (rightmost part of a), furthestmost from the longitudinal axis, the undercut edge (a) being closer to the top surface between the outside portion (inside middle of a) the longitudinal axis. It would have been obvious to one of ordinary skill in the art, having the disclosures of Craven, Fukubayashi, and Linsey before him at the time the invention was made, to modify the head to incorporate an undercut, as in Linsey. One would have been motivated to make such a combination because such a feature prevents the head from pressing the fibers apart and splitting a material, the remainder being left flat and smooth, without the trouble of countersinking, thus providing an example of a self-countersinking head. Examiner also encourages the applicant to review the following, helping to depict that such a feature is extremely well known in the art of fasteners. Dekker, 3,903,784 (Figs. 5 and 7); Place, 2,895,368 (Fig. 1 and 4); Peterka et al, 2,056,688 (Figs. 1,5,8,12); Hobbs, 2,982,166; Maclean, 1,955,924; Twedell, 1,827,628; Campbell et al., 1,820,556; Rich et al., 4,310,272.

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Re: Claim 3, Craven discloses wherein said first portion (353) has asymmetrical threads (thread at 340 compared to the thread at 356 in Fig. 14).

Re: Claim 7, Craven discloses comprising three said rings, wherein said rings are equally spaced with respect to each other (390 and the two rings below in Fig. 14).

[3] Claims 2, 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Craven, US-6,666,638, in view of Fukubayashi, US-5,044,855, and further in view of DeHaitre US-5,516,248.

Although the invention is not identically disclosed or described as set forth 35 U.S.C. 102, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a designer having ordinary skill in the art to which said subject matter pertains, the invention is not patentable.

As for Claim 2, Craven in view of Fukubayashi teach of that from Claim 1, including a shaft with both a first and second portion.

The difference between the claim and Craven in view of Fukubayashi is the claim recites: comprising a knurled portion between said first and second portions. DeHaitre discloses a fastener similar to that of Craven in view of Fukubayashi. In addition, DeHaitre further teaches of a knurled section (18) between both a first (16) and second (10) position of a shaft. It would have been obvious to one of ordinary skill in the art, having the disclosures of Craven in view of Chen and DeHaitre before him at the time the invention was made, to modify the fastener of Craven in view of Fukubayashi to include a knurled section between both the threaded first portion and the second portion as in DeHaitre. One would have been motivated to make such a

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combination to help reduce installation time and increase the drive tool life since the knurled section, as stated in col. 6, beginning with line 4, "cuts away fibers which would otherwise engage the screw shank and thereby reduce frictional resistance with resulting optimization of driver torque in driving the screw into the workpieces and seating the head beneath the work surface" as taught by DeHaitre.

Re: Claim 9, DeHaitre discloses comprising a shank slot adjacent said point (42 in Fig. 1, motivation of which can be found in col. 5 of DeHaitre, beginning with line 44).

[4] Claims 5-6, 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Craven, US- 6,666,638, in view of Fukubayashi, US-5,044,855, and further in view of case law.

Although the invention is not identically disclosed or described as set forth 35 U.S.C. 102, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a designer having ordinary skill in the art to which said subject matter pertains, the invention is not patentable.

As for Claim 5, Craven in view of Fukubayashi teach that of that from Claim 1.

It would have been an obvious matter of art recognized equivalence to have the rings unequally spaced with respect to each other, as Applicant has not disclosed that it solves any stated problem of the prior art (that is, the applicant has not discussed how the unequal placement of the spaced rings will solve a different problem than that of equally spaced rings such as that of Craven; as applicant even submits an embodiment that incorporates an version where the rings are equally spaced between one another) or is for any particular purpose. It appears that the invention would perform equally well as the invention disclosed by Craven. In

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addition, it has been held that rearranging parts of an invention involves only routine skill in the art. *In re Japikse*, 86 USPQ 70. See also, *In re Kuhle*, 526 F.2d 553, 188 USPQ 7 (CCPA 1975) (the particular placement of a contact in a conductivity measuring device was held to be an obvious matter of design choice). This specific reasoning can also be applied to that stated in Claims 6 and 8.

Re: Claim 6 (see above).

Re: Claim 8 (see above).

### ***Response to Arguments***

[5] Applicant's amendments, arguments as well as the declaration filed by Lon DeHaitre, filed on 11/3/2006 regarding rejections under 35 U.S.C. 103 have been fully considered but are considered moot to new grounds of rejection (Craven, US- 6,666,638, in view of Fukubayashi, US-5,044,855). Consequently, all arguments are also considered moot to said new grounds of rejection. Please also note the additional notice of reference cited showing the prevalence in the art of fasteners comprising both threads and shafts possessing that of a trilobular structure.



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*Conclusion*

[6] Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.



[7] Any inquiry concerning this communication or earlier communications from the examiner should be directed to David C. Reese whose telephone number is (571) 272-7082. The examiner can normally be reached on 7:30 am-6:00 pm Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, J.J. Swann can be reached at (571) 272-7075. The fax number for the organization where this application or proceeding is assigned is the following: (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

David Reese  
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DCR

  
1/16/07  
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PRIMARY EXAMINER